



TECHNICAL Practice

TELECOM SOLUTIONS FOR THE 21ST CENTURY

AES-NET Wiegand/CAN Network Board

November 19, 2003

Add One Local and up to 32 Remote Wiegand Type Proximity Card Readers to the AES-2000



The **AES-NET** board, included with the **AES-2000**, allows a local Wiegand device such as a Proximity Card Reader to be added to the **AES-2000** accessible door entry system. Using Proximity cards instead of keyless entry codes, the building manager keeps control over the number of people that can let themselves into the building. The Wiegand device used may be the Viking model **HID-1** Proximity Card Reader or

any other card reader, RF transmitter, or digital keypad that outputs 26 bit Wiegand data.

In addition to a directly connected Wiegand device, the **AES-NET** board also provides two wire CAN bus connections which supports up to 32 additional remote points of entry. Each additional remote entry point requires one Viking Model **ES-3** door controller, one Wiegand device, and a door strike or magnetic lock of your choice. Only one pair of wires are needed to wire all 32 entry system door controllers back to the **AES-NET** board.

Phone...715.386.8861

Features

- Enables the addition of a Proximity Card Reader to the **AES-2000**

? Need More Information on the AES-2000?
Call (715) 386-4345 and select 202.

- Accepts data from an HID card reader using standard 26-bit Wiegand format, such as Viking's **HID-1** or **HID-2**

? Need More Information on the HID-1 and HID-2?
Call (715) 386-4345 and select 197 and 199.

- Supports up to 32 additional **ES-3** entry points through a two wire CAN communication protocol

? Need More Information on the ES-3?
Call (715) 386-4345 and select 195.

- Two wire CAN bus can be daisy chain wired up to 1/2 mile away using a 24 gauge twisted pair

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Applications

- High rise apartments
- Condos
- Senior citizen buildings
- Assisted care centers
- Retirement homes
- Gated communities

Specifications

Power: Powered from **AES-2000** control board

Dimensions: 90mm x 64mm (3.5" x 2.5")

Shipping Weight: .45Kg (1 lb)

Environmental: -26° C to 54° C (-15° F to 130° F) with 5% to 95% non-condensing humidity

Maximum CAN length: 0.8 Km (2600 ft) using 24 AWG twisted pair, 1.6 Km (5300 ft) using 2 pairs of 24 AWG twisted pair

Maximum Wiegand Length: 30 m (100 ft) - 24 AWG wire

Connections: One 8 pin header and six cage clamp screw terminals

Definitions

26 bit Wiegand format: The industry standard data output of access control card readers.

CAN Communications: A highly reliable two wire communications protocol developed for the automotive industry.

Entry point: A door or gate allowing access into a secure or controlled area.

Proxy Card Reader: A device used to read the data from a Proxy Card when it's held within a few inches of the reader.

Facility Code: A 3-digit number that each proxy card contains in order to provide greater security. Usually the cards used at a given building all have the same facility code. By programming cards with different facility codes, these cards can have access to certain doors. Using this feature, the entry system can be set up for "zones".

Proxy Card: A credit size card that identifies itself when within close proximity of a reader. Card "swiping" is not necessary. The card contains a 3 digit Facility Code, a 5 digit Internal Card number and a 5 digit External Printed number, that may or may not match the Internal number.

Wiring

One local Wiegand device (typically a Proximity card reader) is fully supported (power and data) from the **AES-NET** board.

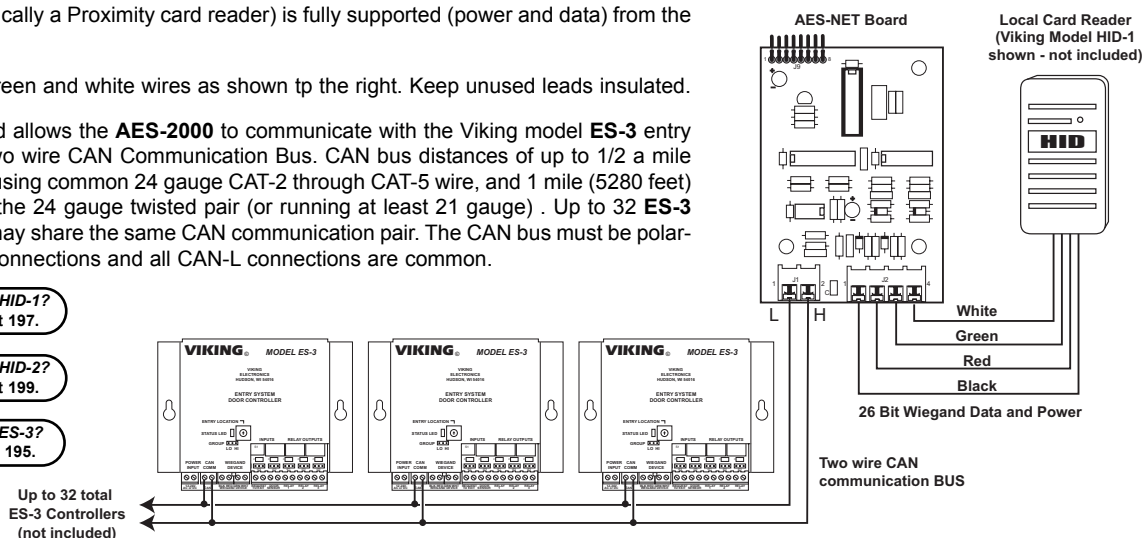
Connect only the black, red, green and white wires as shown to the right. Keep unused leads insulated.

In addition the **AES-NET** board allows the **AES-2000** to communicate with the Viking model **ES-3** entry system door controller via a two wire CAN Communication Bus. CAN bus distances of up to 1/2 a mile (over 2600 feet) are achieved using common 24 gauge CAT-2 through CAT-5 wire, and 1 mile (5280 feet) is possible by doubling up on the 24 gauge twisted pair (or running at least 21 gauge). Up to 32 **ES-3** entry system door controllers may share the same CAN communication pair. The CAN bus must be polarity correct, so that all CAN-H connections and all CAN-L connections are common.

? Need More Information on the HID-1?
Call (715) 386-4345 and select 197.

? Need More Information on the HID-2?
Call (715) 386-4345 and select 199.

? Need More Information on the ES-3?
Call (715) 386-4345 and select 195.

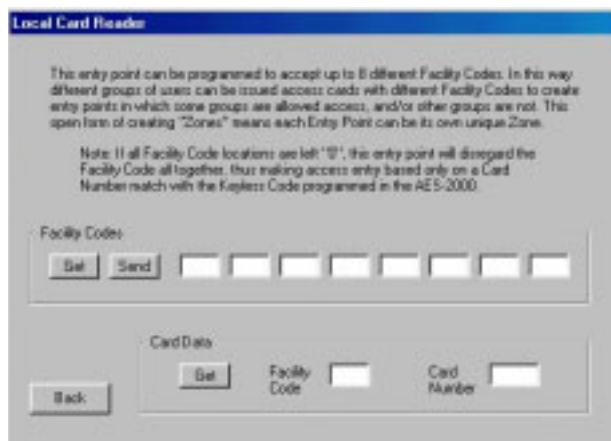


Programming

One local Wiegand type Card Reader can be added to the **AES-NET**. All valid card numbers must be programmed in the system for proper operation. This programming is done through the telephone line interface of the **AES-2000** using the **PB-100** with special software. This allows either remote programming from a distant location, or local programming using the Viking **DLE-300** line simulator. The **PB-100** is connected to a serial port of a P.C. and Windows based software is used to enter Facility codes, relay activation times and alarm conditions for each **ES-3** and the valid card numbers (as keyless entry codes) in the **AES-2000** data base.

Access the Remote Programmer software as described in the **AES-2000** Technical Practice. Proceed through the "Building Selection", "Apartment Selection" and the "Security Code" screens until the "Data Transmit" screen appears. Then click the "Tools" pull down and select "Local Card Reader". The "Local Card Reader" screen will appear as shown to the right.

Twenty six bit Wiegand Access Cards, such as the HID Proximity Card, identify themselves with an eight digit number. The first three digits are considered the Facility Code and are programmed in this screen. The last five digits are the Internal Card Number, and are programmed as the **AES-2000** "Keyless Entry Code" for the person the card will be issued to. For example: If the facility code is **477** and the Internal Card number is **00023**, then program **477** as one of the Facility Codes to be used. The Internal Card number "**00023**" must be programmed into the **AES-2000** as the Keyless Entry Code for the given apartment (see the **Programming** section in the **AES-2000** Technical Practice). Up to eight different Facility Codes can be programmed.



Operation

The **AES-NET** board allows **ES-3** Entry System Access Controllers to communicate with the **AES-2000**'s main board to provide up to 32 remote access controlled entry points.

The **AES-NET** board also monitors a local Wiegand device (ie, proximity card reader) for 26 bit data. When data is received, it is sent to the **AES-2000** which compares it against the programmed data base. If the Facility Code matches, and the card number matches a programmed Keyless Entry Code, access will be granted just as if the tenant dialed the keyless entry code on the **AES-2000** keypad.

Product Support Line...715.386.8666

Fax Back Line...715.386.4345

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